THE BOSTON
MEDICAL AND SURGICAL JOURNAL.

VOL. XCVII. — THURSDAY, SEPTEMBER 6, 1877. — NO. 10.

FRACTURE OF THE PATELLA.[1]

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THE following is an analysis of fifty-nine cases of fractured patella occurring in the Massachusetts General Hospital: —

Number of cases:	
Males	47
Females	12
Causes of Fracture:	
Direct blow	48
Muscular action	11
Character of fracture:	
Simple	56
Compound	2
Comminuted	1
Species of fracture:	
Transverse	51
Oblique	2
T shaped	2
Compound[2]	2
Comminuted	1
A small fragment broken off	1
Refractures	8
Double fracture	2
Average amount of separation before treatment	1.1 inch.
Average amount of separation after treatment	.33 inch.
Bony union	2 (?)
Average length of treatment in the house	6 weeks.

Of the fifty-nine cases of fracture 81.4 per cent. were the results of a direct blow, and 18.6 per cent. were caused by muscular action. The greatest distance apart of the fragments before treatment was four inches, and the result one half inch separation. The greatest amount of separation after treatment was one half inch. In nine cases where the separation ranged from one to four inches the average distance between the fragments after treatment was two fifths of an inch. There were four cases where patients walked about on the injured leg for six or seven days and still got good union.

There were two cases of probable bony union. In the first case

[1] Graduation Thesis, Harvard Medical School.

[2] No particulars given.

there was a transverse fracture about the middle, but the fragments were held in such close apposition by the aponeurotic covering of the patella that it was only by crepitus that it was at first diagnosticated.

The second case was a particularly interesting one. The patient, a married woman, fractured her patella, and owing to pregnancy received no treatment. A year and a half after the accident she applied at the hospital. At that time there was an inch and a half separation, and the leg was almost useless. The joint was opened, a portion of each fragment removed with the bone forceps, and the parts were wired together. In six weeks the fragments were firmly united by apparently bony union.

One patient entered the hospital four times for fracture of the patella. The first fracture was a transverse one, and she was discharged in four months with good union. Six months after, she returned with a second fracture, the line of separation in this case extending downwards and outwards from the first. She was again discharged with good union. The third fracture, which occurred fourteen months after, was in the same place as the second, and also resulted well. The fourth fracture was at the lower border of the patella, and she was once more discharged with a good result. The first three fractures were from direct blows; the last from muscular action.

In a large number of cases there was considerable effusion into the joint, but this did not seem to interfere with the ultimate approximation of the fragments.

The treatment adopted was various: the leg was frequently put upon the Goodwin, McIntyre, or Whitten splint, and as soon as the effusion had subsided the fragments of the patella were drawn together by bandages or plaster in various ways. A ham splint with a figure eight bandage about the knee has been a favorite method of treatment, a new bandage being reapplied over the old as soon as it became loose. A ham splint merely, without any attempt to bring the fragments together, has been found to work well, the fragments falling into apposition of themselves.

In a certain number of cases apparatus designed especially for this fracture was used. The leg was kept on the splint or in the apparatus for a period of from three to eight weeks, and then a plaster or dextrine bandage was put on, which was worn for at least four weeks more; the patient was then encouraged to begin using the leg. Whatever the method of treatment, however, the results appear to be about the same. There is nothing in the record of the cases to show that anything was gained by the more complicated appliances.

In treating, then, a case of fracture of the patella we have three things to consider: —

(1.) How to obtain the best result.

(2.) To do this with least pain and discomfort to the patient.

(3.) The simplicity and accessibility of the apparatus.

Probably for no other fracture have there been so many complicated apparatuses invented as for this, and if any of these possess preëminent advantages it is our duty to use them so far as lies in our power. But when we find the same results obtained by simple means, less annoying to the patient and accessible to all, we have no hesitation in deciding for the latter.

When called, then, to a case of this fracture our first thought is to make the patient as comfortable as possible. The leg should be placed on a ham splint, and bandaged so as to leave the knee exposed. If there is much effusion, ice-bags should be applied to the knee. The patient being kept quiet, then, the fragments will tend of themselves to draw together, and as soon as this is accomplished and union has begun some form of stiff bandage may be applied, as early, perhaps, as the third week. The stiff bandage should be kept on for a month or six weeks, and then it should be removed and the patient be encouraged to begin to use the leg. He should be warned that, however close the union may be at first, in all probability the interval will lengthen under use. The treatment by simple rest or by a ham splint and figure eight bandage is unsatisfactory certainly; but then, so are all the methods of treatment, and other things being equal the simplest is the best. In case the fragments are not approximated by these means some other apparatus can be tried, which may well be left to the ingenuity of the surgeon in charge.

I will close with the report of a case at the Massachusetts General Hospital, in the service of Dr. Cabot, in which an apparatus, so far as I know original with the writer, was used with good result. To any one who has used the short Dessault splint for fracture of the leg its application will be apparent. It is readily put on, is very comfortable to the patient, can be managed by any one, and does not need to be readjusted. It leaves the knee exposed, so that applications may be made to it if necessary, and brings the fragments together with a force at once powerful and easily controlled.

Patrick F., thirty-two years of age, while driving was kicked in the knee by his horse, causing a transverse fracture of the patella, the lower fragment being broken in two pieces. A temporary splint was put on the leg, and he was brought to the hospital ten hours after the accident. The knee was then very much swollen, and there was pain and exquisite tenderness in the neighborhood of the joint. There was about two thirds of an inch separation between the upper and lower fragments of the patella. The leg was put on a ham splint and ice-bags were applied. Two days later, the effusion having somewhat subsided, an attempt was made to bring the fragments into apposition. The apparatus

used was as follows: Two long, narrow side splints extended on each side of the leg from the middle of the thigh to about ten inches below the foot. These splints were connected at the lower end by a movable cross-bar, which could be fixed at any point by means of pegs. Through the middle of the cross-bar played a screw, to the end of which was attached a wire yard. The yard, of course, advanced or retreated with the turn of the screw.

Thus far it was simply a Dessault's apparatus. Two broad strips of plaster were started well up the thigh and fastened securely to within a short distance of the patella; these strips passed down the leg, to be attached to the wire yard at the end of the screw, thus furnishing extension. Similar strips of plaster, but somewhat narrower, were started on the leg and passed upward through slits cut in the upper pieces of plaster to be attached to the end of the splint; this supplied counter-extension. By turning the screw, then, the fragments of the patella could be drawn together by a force to be measured only by the strength of the apparatus and the patient's endurance. For the next three weeks the fragments were kept in close apposition without pain to the man. A dextrine bandage was then applied, and the patient was discharged.

Three weeks later the dextrine was sawed off, and firm union was found, the fragments being about one eighth of an inch apart.

EXTRAORDINARY TOLERANCE OF A POISONOUS DOSE OF CHLORAL HYDRATE.

BY PHANUEL E. BISHOP, M. D., PAWTUCKET, R. I.

On the evening of the 12th of July Mr. P. R., of Irish parentage, aged thirty-two, a glazier by trade, came into my office suffering from nervous prostration and loss of sleep, consequent upon the free use of alcoholic liquors. He had been drinking more or less every day since the 4th. He did not present any marked symptoms of delirium tremens. I prescribed strong coffee, beef tea, aromatic spirits of ammonia, and gave him twenty grains of Dover's powder to take at bed-time.

I saw no more of him until the next evening, when I was called to his home. I learned from his wife and others that he had not slept for sixty hours. He presented a typical case of delirium tremens with all the mental aberrations, illusions, hallucinations, etc., which usually accompany the disease. I wrote the following prescription, which is the one I usually give in like cases: —

℞ Chloral hydrate . . . . . ℥ss.
Ext. scutillariæ fld. . . . . ʒj.
Syr. zingiberis, adde q. s. ut ft. mist. . . . . ʒij. M.
S. A teaspoonful in an ounce of brandy every half hour until the patient sleeps.